Base station communication signal detection

Overview

Base station analyzers are designed to test various parameters that determine the health of a base station. These include signal strength, frequency accuracy, modulation quality, transmission power, and overall spectrum integrity. In the context of the LTE base station signal, the pilot signal is inserted into the frame format of the OFDM signal to enhance the target detection performance of the base station. This paper presents a new method to. Integrated Sensing and Communication (ISAC) is an important trend for future commutation networks. However, with the requirements of long-range and accurate sensing in the applications of smart city and aut nomous driving, the ISAC enabled single BS still has a limitation in the sensing range and. In this study, we aim to identify and address the security threats posed by rogue base stations in the IIoT. Our detection approach is based on reference signal received power (RSRP) analysis, which allows us to monitor and evaluate signal strength variations.

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[The First Experimental Validation of a Communication Base Station ...]

In this paper, we investigated the observation and performance for millimeter-level ground deformation detection based on the CBS with Differential InSAR (D-InSAR) for the first time.

[Integrated Sensing and Communication Enabled Multiple Base ...]

The enabling technologies, including unified ISAC performance metrics, ISAC signal design and optimization, interference management, cooperative sensing algorithms, are introduced ...

[Integrated Sensing and Communication enabled Multiple Base ...]

Due to the low sensing accuracy of single base stations (BSs), a cooperative UAV sensing method by multi-BS is proposed in this paper to achieve high-accuracy sensing.

[Characterization of Monostatic Base Stations Sensing Resolution ...]

We introduce a novel architecture that repurposes existing 3GPP signals--Synchronization Signal Blocks (SSBs) and Positioning Reference Signals (PRSs)--for monostatic sensing at base stations ...

[How Do Base Station Analyzers Improve Wireless Communication]

Base station analyzers offer powerful spectrum analysis tools that provide a visual representation of signal activity across a range of frequencies. By analyzing the spectrum, ...

[Integrated Sensing and Communication Enabled Multiple Base ...]

This work systematically study and demonstrate the concept of cellular base station imaging for UAV detection, which allows a cellular BS to work like an inverse synthetic-aperture ...

[A time synchronization attack detection framework for communication]

Building on this method, a real-time detection framework is developed that requires no hardware modifications and can be directly integrated into existing base station systems using standard ...

[Rogue Base Station Detection in Industrial Internet of Things]

By emulating IIoT environments using SDR, our system effectively detects rogue base stations through temporal signal variations, ensuring dynamic detection capabilities while maintaining ease of ...

[Integrated Sensing and Communication enabled Multiple Base ...]

Contradiction between the signals of sensing and communication: There is a contradiction between the random communication signal and the structural sensing signal, which brings challenges to ISAC ...

[Radar Detection Based on Pilot Signals of LTE Base Stations]

This paper proposes a radar communication shared signal waveform, which can achieve higher resolution while using OFDM signals for target detection. Firstly, the ambiguity function of OFDM ...

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